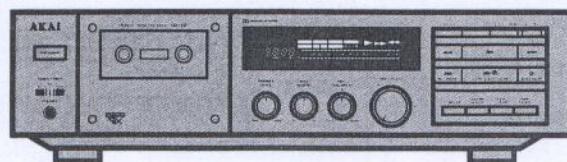


AKAI

STEREO CASSETTE DECK

GX-52



Operator's manual 5

* Cassette tapes shown in the illustrations are not standard accessories.



This is Your Akai Stereo Cassette Deck

This Akai Stereo Cassette Deck will provide excellent sound reproduction and years of reliable operation. Use it in combination with other components of the Pro Series, and you will have an excellent Hi-Fi system.

Features

- 3 head system equivalent function (except monitor function) Twinfield Super GX heads which incorporate LC-OFC (Linear Crystal-Oxygen Free Copper) wire
- Direct drive mechanism
- Special chrome plated capstan
- DC playback amplifier and improved recording circuits
- High speed response and large capacity power supply with high quality semiconductor parts
- Microcomputer controlled direct lead-in/power eject system with quick and quiet mechanism
- Dolby B and C type noise reduction system and MPX filter switch (See page 13 & 14)
- Wide scale 2-color FL peak level meter with the recording level guide (See page 14)
- BIAS control (See page 6)
- IPSS system (See page 8)
- Dolby HX PRO headroom extension system (See page 13)
- 2-way auto mute system (See page 10)
- Convenient recording cancel system (See page 5, 6)
- Auto repeat and autospin system (See page 7, 9)
- Real time digital tape counter (See page 12)
- Separate voltage regulators, one for equalizer amplifier circuits and one for noise reduction circuits
- 3 position auto tape selector (See page 15)
- PHONES level control (See page 7)
- Timer start function (See page 11)
- Large centralized FL (Fluorescent) display
- Raised foot pedestals
- Remote control capable (See page 3)

Table of contents

This is Your Akai Stereo Cassette Deck	1
What You Should Know to Protect Yourself	2
Making the Right Connections	3
This is the Akai Stereo Cassette Deck	4
Let's Record	5-6
Let's Play Back a Tape	7
Convenient Playback Features of the Akai Stereo Cassette Deck	8-9
A Little Know-how Goes a Long Way	10
Absentee Recording and Timed Playback	11
Operation Details	12-14
Let's Take Good Care of Your Cassette Tapes	15
...and Take Good Care of Your Stereo Cassette Deck too	16
Problem? Let's Check First	17
Specifications	18

WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

Power requirements

Power requirements for electrical equipment differ from area to area. Please ensure that your machine meets the power requirements in your area.

If in doubt, consult a qualified electrician.

120 V, 60 Hz for USA and Canada

220 V, 50 Hz for Europe except UK

240 V, 50 Hz for UK and Australia

127V/220V, 50/60Hz for Saudi Arabia

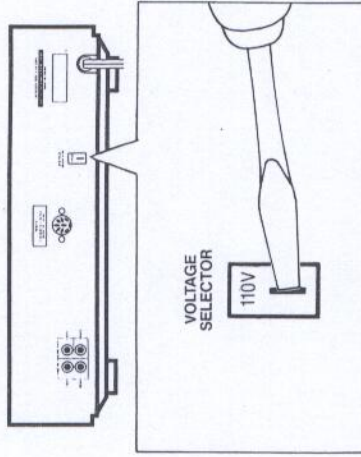
110 V/120 V/220 V/240 V, 50 Hz/60 Hz convertible for other countries.

Voltage conversion

(Not on all models)

Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each unit is preset at the factory according to its destination, but some units can be adjusted to 110 V, 120 V, 220 V or 240 V as required. If your unit's voltage can be converted:

Before connecting the power cord, turn the VOLTAGE SELECTOR located on the rear panel with a screwdriver until the correct voltage is indicated.



This equipment conforms to No. 82/499 EEC standards.

What you should know to protect yourself

Watch out! You might get an electric shock.

- Never touch the plug with wet hands.
- Always pull out by the plug and never the cord.
- Only let a qualified professional repair or reassemble the Akai stereo cassette deck. An unauthorized person might touch the internal parts and receive a serious electric shock.
- Never allow a child to put anything, especially metal, into the Akai stereo cassette deck.

Let's protect the Akai Stereo Cassette Deck too.

- Use only a household AC power source. Never use a DC power source.
- If water is spilled on the Akai stereo cassette deck, disconnect the power and call your dealer.
- Make sure that the Akai stereo cassette deck is well ventilated and away from direct sunlight.
- To avoid damage to the internal circuits and the external surface, keep away from heat (stoves, etc.).
- Avoid using spray type insecticide near the Akai stereo cassette deck. It can damage the finish and might ignite suddenly.
- To avoid damaging the finish, never use paint thinner or other similar chemicals to clean the Akai stereo cassette deck.
- Place the Akai stereo cassette deck on a flat and solid surface.
- If you don't plan to use the Akai cassette deck for a long period of time, disconnect the power cord.

To enjoy the Akai stereo cassette deck for a long time, please read this operator's manual thoroughly.

Dew formation

Dew is the term used for the formation of moisture on the very important tape transport sections such as the heads and the capstans, when the deck is used in places where humidity is high, or moved from a cold place to a warm one. If the deck is used when dew is present, the tape will stick to the head and be ruined, or it will not be transported properly. In that case, do not use the deck for approximately one hour until the deck is acclimatized.

Placement

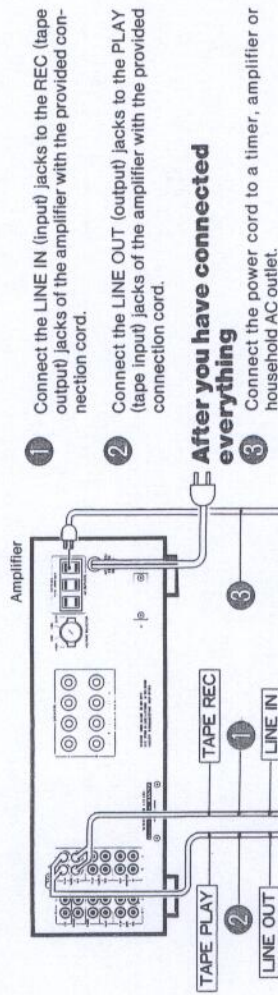
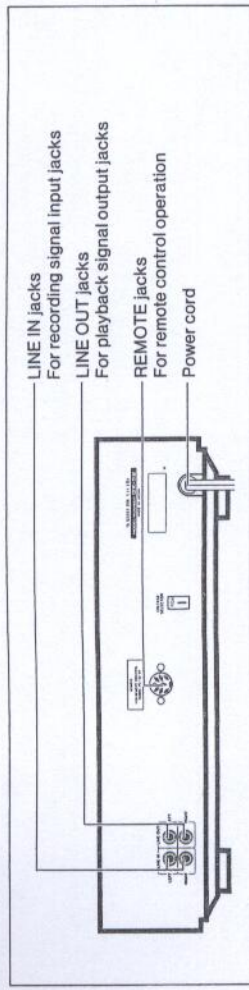
If the deck, tuner and amplifier are placed on top of each other, humming noise may result during playback. Also beat noise may result during recording of AM broadcasts. In this case, change the position of the deck. Akai recommends that a space the size of an amplifier be placed between the deck and the tuner or the amplifier.

Making the Right Connections

3

Check first

- Turn off all the components before connection.
- Connect the power cord last.
- Make sure that you connect the white PIN-plugs to the left (L-white) jacks and the red PIN-plugs to the right (R-red) jacks.
- Connect everything securely. Loose connections can lead to distortion.
- To prevent damage to the cords, connect and disconnect by holding the plug and not the cord.



After you have connected everything

1. Connect the power cord to a timer, amplifier or household AC outlet.
2. Connect the LINE IN (input) jacks to the REC (tape output) jacks of the amplifier with the provided connection cord.
3. Connect the LINE OUT (output) jacks to the PLAY (tape input) jacks of the amplifier with the provided connection cord.

For remote control operation

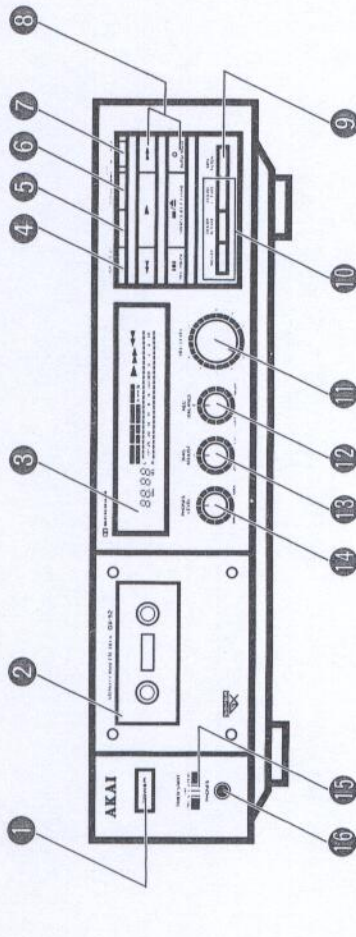
Connect the optional remote control unit RC-32 (wired type) or RC-92 (wireless type) to the REMOTE jack. Consult operation instructions of your remote control unit for operation details.

Important!

The illustrated power plugs and cords are intended for general reference. The power plug and cord used in your country may differ from the illustration. (Example: U.K., Australia, U.S.A., Europe etc.)

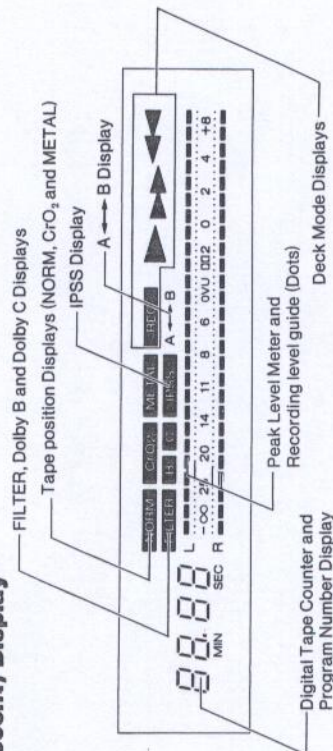
This is the Akai Stereo Cassette Deck

4



1. **POWER Switch**
To turn ON and OFF the power.
2. **Cassette lid and cassette holder (Power assisted)**
Load a cassette tape here. To open, press the $\blacksquare / \blacktriangle$ button. To close, press once again. Do not manually open this cassette holder, as it may damage your equipment.
3. **FL (Fluorescent) Display**
Tells you what the cassette deck is doing.
4. **COUNTER RESET button**
To reset the digital counter to "00.00".
5. **IPSS button**
To select playback with the IPSS system.
6. **A \leftrightarrow B MEMORY button**
For memorization of a selection(s) or part of a selection that you wish to hear repeatedly. Also used with the recording cancel system for erasure of unwanted parts.
7. **REC CANCEL button**
To cancel recording and rewind tape to the beginning of the just recorded position. Convenient for re-recording a section of tape.
8. **Operating buttons**
For playback and recording operations. Press the ($\blacksquare / \blacktriangle$) button to open and close the cassette holder.
9. **MPX (Multiplex) FILTER switch**
To turn on and off the multiplex filter.
10. **Noise reduction selector (NR OFF, DOLBY B and DOLBY C)**
To select noise reduction for recording and playback purposes.
11. **REC LEVEL control**
To set recording levels. The level adjustment is the same amount for both right and left channels.
12. **REC BALANCE control**
To set the left and right channel balance of recording input levels.
13. **BIAS ADJUST control**
To set the recording bias current. The bias adjustment range is between -20% and +20% of the proper bias current of each tape position. If using a reference tape recommended for use with Akai cassette decks, set this control to the center click "0" position.
14. **PHONES Level control**
To adjust the output level of the PHONES jack.
15. **TIMER START Switch**
For absentee recording and timed playback.
16. **PHONES jack**
To listen through a pair of headphones, connect them to this jack.

FL (Fluorescent) Display



Get ready

- Set the **TIMER START** switch to OFF.
- Depress the **POWER** switch to turn on your stereo cassette deck.
- To stabilize the stereo cassette deck, the tape operation buttons will not function for approximately 4 seconds after the stereo cassette deck is turned on.
- Set the amplifier's input selector or the **REC OUT** selector to the recording source.
- For normal recording purposes, set the **MPX filter** switch to OFF.

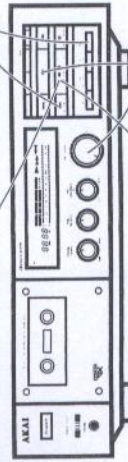
- 1 **Press the \blacksquare/\triangle button** and load a cassette tape. (Insert exposed tape side down).

- 2 **Select the noise reduction system** you wish to use. Refer to page 13 for details.
- 3 **Press the \bullet button.** (At this time the cassette holder will close automatically if you haven't already closed it.) The **REC** indicator will light and the \blacktriangleright display will begin flashing to indicate the **recording standby mode**.

- 4 **Adjust the recording level** with the **REC LEVEL** control, and **REC BALANCE** control if necessary. Basically, adjust the **REC LEVEL** control to set the recording level so it does not exceed the recording level guides on the peak level meter.

- 5 **To begin recording**, press the \blacktriangleright button.

- 6 **To stop recording**, press the \blacksquare/\triangle button.



If you want to play back a just recorded section quickly

Press the **IPSS** button before you begin recording. After recording, press the \blacktriangleleft button once and the just recorded section will be detected and played back.

- Refer to page 8 for **IPSS** details.

To cancel a just recorded section Use the **REC CANCEL** button

Press the **REC CANCEL** button while the tape deck is in the **recording mode**. This cassette deck will rewind the tape to the beginning of the just recorded section, then stand by for recording after creating 4 seconds of blank space.

To resume recording

Press the \blacktriangleright button.

If you don't want to create 4 seconds of blank space when using the recording cancel system

Press the \bullet button when the **REC** indicator first appears on the **FL** display immediately after the tape has rewound. The cassette deck will go into the recording standby mode instead of creating blank spaces.

Notes on **REC CANCEL**

- In order for recording cancel to function properly, there must be 4 seconds or more of blank space at the beginning of the selection. To create blank spaces between selections, use the \bigcirc button during the **REC PAUSE** mode.
- After **REC CANCEL** has been performed, always make certain that you are at the beginning of the selection before re-recording.

The **BIAS ADJUST** control

This tape deck is equipped with a **BIAS ADJUST** control which can adjust the recording bias current from a range of -20% to $+20\%$ of the proper current for each tape position. Refer to the chart to set the **BIAS ADJUST** control properly for each tape position.

Note

Avoid setting the **BIAS ADJUST** control to the maximum $+$ or $-$ positions, since the frequency characteristics of the tape will change too sharply.

Comparing source signals and just recorded signals

It is necessary to compare the original and just recorded signals in order to properly adjust the **BIAS ADJUST**, **REC BALANCE**, and **REC LEVEL** controls. To compare source signals and recorded signals while recording, listen for sound variation by rewinding the tape and playing back the recorded portion. To do so set the **IPSS** switch to ON (the **IPSS** display will appear) and press the \blacktriangleleft button to playback the recorded portion immediately.

Condition	Problem	Bias adjustment
High frequency signals are strong (stressed) in comparison to the low and mid signals.	BIAS is lower than the proper bias current for that tape type.	Turn BIAS ADJUST control toward $+$ (increase) after you have listened to the playback of the just recorded portion.
Low and mid frequency signals are strong (stressed) in comparison to high signals.	BIAS is higher than the proper bias current for that tape type.	Turn BIAS ADJUST control toward $-$ (decrease) after you have listened to the playback of the just recorded portion.

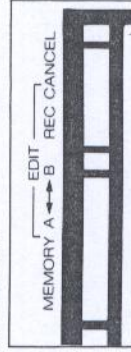
Standard reference tapes for this cassette deck

Types of tape	Reference tapes
Normal position	MAXELL UD I*
CrO ₂ position	TDK SA*
Metal position	TDK MA*

- * Normally, set the **BIAS ADJUST** control to "0" when using one of the standard reference tapes listed.
- * Only C-60 (60 minute) tapes with this mark are the standard reference tapes.

If you want to erase part of a recorded program (Edit mode)

Use the **REC CANCEL** and **A \longleftrightarrow B** buttons if you want to erase after recording.



Check before erasing the program

Make sure the recording defeat tabs of the cassette tape are not broken. The cassette deck will not go into recording cancel mode if they are. Refer to page 15, "cassette tapes" for more details.

Operation

- 1 Playback the tape.
- 2 Press the **MEMORY A \longleftrightarrow B** button once at the point you wish to begin erasing. The **A \longleftrightarrow B** display will flash on and off.
- 3 Press the **MEMORY A \longleftrightarrow B** button again when you reach the point at which you wish to stop erasing. The **A \longleftrightarrow B** display will appear and the cassette deck will stop.
- 4 Press the **REC CANCEL** button. The deck will rewind the tape and begin erasing between the two points you have programmed. When the erasing is finished the deck will stop automatically.

To confirm the portion to be erased (before beginning erasure)

After operation 1, 2 and 3, press the \blacktriangleright button for playback. The deck will go into one time repeat playback mode. After the memorized portion is played the deck will stop automatically.

After confirmation

Press the **REC CANCEL** button to start erasing.

To cancel the memorized erasing operation

Press the \blacksquare/\triangle button. The **A \longleftrightarrow B** display will disappear.

If you are only erasing a short section of tape

Before memorizing the portion for erasure

Keep the \blacktriangleright button depressed for about 1 second. The deck will go into half speed playback mode. The \blacktriangleright display will flash on and off during half speed playback. Then press the **A \longleftrightarrow B** MEMORY button and the **REC CANCEL** button as in the previous procedures 1 to 3.

Notes

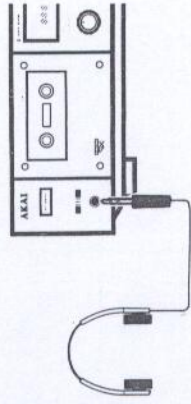
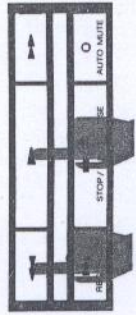
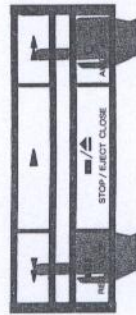
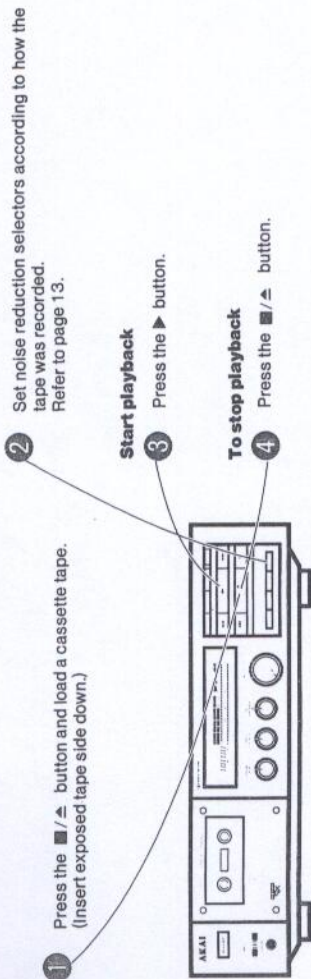
- Tape check: Before erasing the tape, take up slack with a pencil, for example.
- After the half speed playback, you cannot confirm a memorized portion you want to erase by pressing the \blacktriangleright button.
- If you want to cancel the memorized portion, press the \blacksquare/\triangle button. The **A \longleftrightarrow B** display will disappear.
- During half speed playback other functions such as recording, rewinding or fast forwarding cannot be used. The only button that will operate when pressed is the \blacksquare/\triangle button used to stop the cassette deck.

Let's Play Back a Tape

7

Get ready

- Set the **TIMER START** switch to OFF.
- Depress the **POWER** switch to turn on your stereo cassette deck.
- To stabilize the stereo cassette deck, the tape operation buttons will not function for approximately 4 seconds after the stereo cassette deck is turned on.
- Set the amplifier's input selector or the tape monitor switch for tape playback.

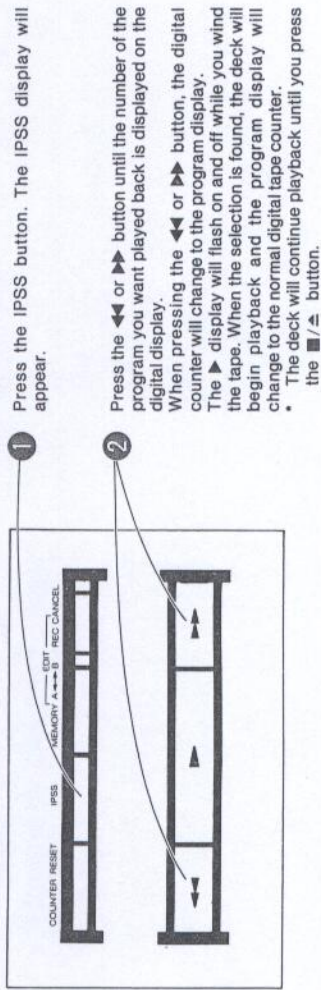


Convenient Playback Features of the Akai Stereo Cassette Deck-1

8

The IPSS (Instant Program Searching System) can select and automatically playback up to 16 programs.

Basic operation



Example IPSS playback

1, 2, 3, 4, 5: represent the space between programs A, B, C, *, D, E, F, G, H: represent the recorded programs

4	Program A	3	Program B	2	Program C	1	Program *	1	Program D	2	Program E	3	Program F	4	Program G	5	Program H
---	-----------	---	-----------	---	-----------	---	-----------	---	-----------	---	-----------	---	-----------	---	-----------	---	-----------

Current Playback (In this example)

- To automatically play back from the beginning of the current or next selection (Program D)**
For playback of the next selection (Program D) Press the **▶▶** button
For playback of the beginning of the present selection (Program *) Press the **◀◀** button
01 will appear on the digital display by pressing the **◀◀** or **▶▶** button.
 - Playback from the beginning of program B**
Press the **◀◀** button three times. 03 will appear on the digital display.
If you want to playback from the beginning of program A, press the **◀◀** button four times.
 - Playback from the beginning of program G**
Press the **▶▶** button four times. 04 will appear on the digital display.
- To Cancel the IPSS operation while winding the tape**
Press the **■/△** button.
To cancel the IPSS system, press the **IPSS** button. The IPSS display will disappear. If winding the tape, press the **■/△** button to stop.

Note for IPSS systems

- The IPSS system operates when the music signals are below a specific level for a required length of time. When playing music, such as orchestral and live recorded music, some parts of the recording may contain low signals for more than the required length of time (more than 4 seconds), and will cause misoperation of some of the IPSS function.
- In live recordings, there may be applause between the selections which is too loud to be detected as a blank space, and the IPSS function cannot operate properly.
- Do not press the **◀◀** or **▶▶** button at the very beginning or end of a selection. The IPSS function cannot operate properly.

You can memorize sections for repeated playback

By memorizing two points (beginning and end), you can play back any section of a tape that you wish. This is ideal for times that you want to listen to one particular section of a song repeatedly. One complete song or the whole tape can also be memorized for repeated playback. Use the A \leftrightarrow B MEMORY button.

Operation

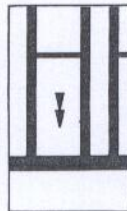
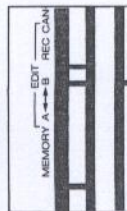
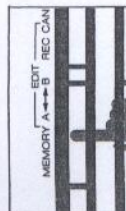
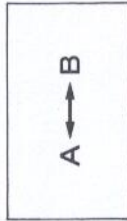
- 1 Start playback.
- 2 Press the A \leftrightarrow B MEMORY button to memorize the beginning (start) of the section you wish to playback repeatedly.
The A \leftrightarrow B display will flash on and off.
- 3 Press the A \leftrightarrow B MEMORY button again to memorize the end of the section you wish repeated. The A \leftrightarrow B display will appear and the cassette deck will stop automatically.

To start the repeat playback

Press the \ll button. The deck will rewind the tape to the beginning of the repeat playback and start playback.

To stop the repeat playback

Press the \blacksquare/Δ button. The deck will stop and the A \leftrightarrow B display will disappear.



Notes on repeat playback

- When you press the \blacksquare/Δ button to start playback after memorizing, the deck will playback the memorized portion one time only, then automatically stop.
- If you want to memorize a few selections or the whole tape for repeated playback:
After pressing the A \leftrightarrow B MEMORY button you can use the \blacksquare/Δ button or \ll button to speed up things when memorizing a large section of tape. Once you are near the point you intend to end your memorized section, press the \blacksquare/Δ button. Memorize the end by pressing the A \leftrightarrow B MEMORY button again. (The A \leftrightarrow B display will flash on and off until this is done) Now you can press the \ll button to start the repeated playback.
- Do not touch the REC CANCEL button after memorizing. The memorized part will be erased.

To create blank spaces between selections

You can automatically create 4 seconds of blank space with the \square/Δ button.

- 1 Start recording.
- 2 Press the \square/Δ button at the end of a selection.
- 3 The stereo cassette deck will create 4 seconds of blank space, then standby for recording.
- 4 To resume recording, press the \triangleright button.

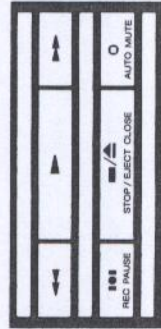
To create a blank space for an indefinite (longer) amount of time with the \square/Δ button

Press the \square/Δ button twice, successively. The REC display will flash quickly during this operation.

- 1 To stop recording
Press the \blacksquare/Δ button.
- 2 To stop mute recording
Press the \blacksquare/Δ button. The deck will go into recording standby mode.
- 3 To resume normal recording mode
Press the \triangleright button.

To create a blank space before the start of recording

- 1 Press the \blacksquare/Δ button first. The deck will go into recording standby mode.
- 2 Press the \square/Δ button at once. The deck will create a 4 second blank space, then standby for recording.
- 3 Start normal recording by pressing the \triangleright button.



Quick Start

Quick start is to immediately record, without waiting for recording standby.
Simultaneously, press the \blacksquare/Δ and \triangleright buttons.

To record from playback

Use this method to record an unrecorded portion of tape. You can also use this method to re-record over a recorded portion of tape.

- 1 Start playback of the source.
- 2 When you come to the point where you want to start recording, simultaneously depress the \blacksquare/Δ button, and the \blacksquare/Δ button. Recording will begin immediately.

To temporarily stop recording

Press the \blacksquare/Δ button. The stereo cassette deck will go into the recording standby mode.

To resume recording

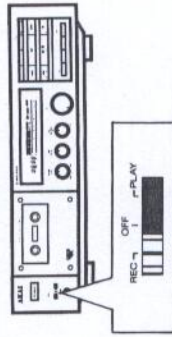
Press the \triangleright button.

Absentee Recording and Timed Playback

This cassette deck has a timer start function. When used in combination with an Akai audio timer (optional), you can record or play back a tape at a specific programmed time.

Prepare for absentee recording

- 1 Set the timer mode to EVER ON by pressing the timer mode selector, and turn on your stereo system.
- 2 Press the \blacksquare/Δ button and load a cassette tape.
- 3 Tune in a station you want to record with the tuner.
- 4 Set the noise reduction selector.
- 5 Set the audio timer to the TIMER mode with the timer mode selector.
- 6 The connected stereo components will turn off.
- 7 Set the TIMER START switch to REC.

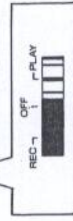


Notes for absentee recording:

- This is not an auto reverse type cassette deck. Therefore, it is necessary for you to turn over the cassette tape after recording of one tape side has been completed, if you want to record on the other side. When performing absentee recording make certain that the tape is long enough to record the entire program.
- If recording a radio broadcast, do not forget to properly tune in the station you want to record and set the amplifier's input selector to TUNER.
- Normally, keep the VOLUME control set to the minimum position during absentee recording. If you want to listen while recording, set the VOLUME control to the normal listening level.

Attention

After absentee recording and timed playback
Before turning ON the power of the cassette deck, set the TIMER START switch to OFF.



Operation Details

How to set the correct recording input levels

Basic recording level adjustment

Basically, adjust the REC LEVEL control to set the recording level so it does not exceed the recording level guides on the peak level meter.

Note for recording level adjustment

The recording level guides will vary according to tape position.

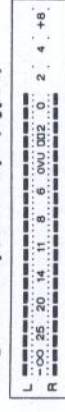
Example of recording level adjustment

Using a chrome position tape (Type II)



Maximum recording level \uparrow

Using a normal position tape (Type I)



Maximum recording level \uparrow

To make good recordings

To make good recordings, the recording input levels must be correct.

The recording input levels should be set as high as possible, without exceeding the recommended levels indicated on the peak level meter. If the recording levels are too high, distortion will result. If the input levels are too low, noise such as tape hiss will become noticeable. Make certain that the recording input levels match the maximum saturation levels of the music source, which can be monitored on the peak level meter.

Monitor the input source signals by pressing the \blacksquare button before recording, and monitoring the maximum recording level indications on the peak level meter. Adjust the REC LEVEL control accordingly.

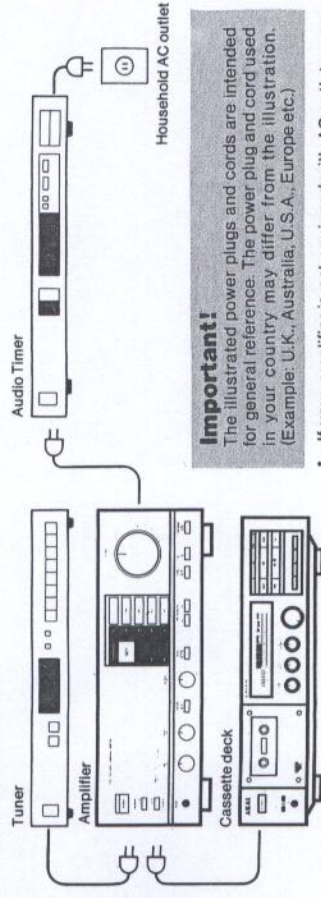
Adjusting the REC LEVEL control during recording
The recording input levels should be set according to the type of tape used, but also set them according to the music source.

Compared with music containing mostly vocals, music containing mostly strings, pipe organs, pianos, percussion, etc. have signals in the high levels which are distributed widely over the frequency range, even up to the highest frequencies. Therefore, if the recording input levels of music containing mainly vocals are set at the same level as the orchestral music, the high frequencies will be beyond the tape's saturation level and distortion will result. Thus, during recording, sometimes it is necessary to adjust the REC LEVEL control to a higher or lower level, accordingly.

When right and left channel balance adjustment is needed:

- Use the REC BALANCE control
- To decrease the right channel level
- Turn the REC BALANCE control to L (left).
- To decrease the left channel level
- Turn the REC BALANCE control to R (right).
- Normally, set the REC BALANCE control to the center click position.

Power cord connection



Important!

The illustrated power plugs and cords are intended for general reference. The power plug and cord used in your country may differ from the illustration. (Example: U.K., Australia, U.S.A., Europe etc.)

- If your amplifier is not equipped with AC outlets, connect the power cords to the timer's AC outlets.

The Digital counter

The Digital counter displays the amount of tape that has been played in minutes and seconds. (up to 99 min. 59 sec.)

Depress the COUNTER RESET button to reset the counter. The counter will be reset when the power switch is turned off.

The approximate remaining time of a tape (one side) can be displayed

Before you start recording you can set the counter to show the length of the tape you are using in minutes and seconds. Once this is done, the number will decrease as you record and show you how much remaining time you have on the tape. Here is how it's done:

1. Fast forward the cassette tape up to its end.
2. Re-set the counter to 00.00.
3. Rewind the tape to the beginning. Now the counter shows the tapes length in minutes and seconds.

Accuracy of the counter

The counter of a cassette tape deck is not as accurate as a stop-watch or clock. It displays approximate time.

Set the proper noise reduction system before all recording and playback operations

When playing back a tape, set the noise reduction selector to the type used when the tape was recorded. Set the noise reduction selector to OFF when a tape was recorded without the use of a noise reduction system.

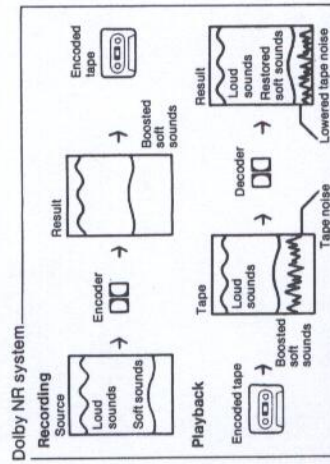
What is the DOLBY Noise Reduction (NR) System?


When you record without the DOLBY NR system, you can't hear the soft sounds very clearly because they are masked by noise added by the tape during recording. The DOLBY NR system reduces this annoying tape noise. The DOLBY NR encoder circuit boosts the low-level signals (soft sounds) during recording and playback, and the DOLBY NR decoder lowers the low-level signals by exactly the same amount to restore the low-level signals to their original levels. At the same time, tape noise is lowered by the same amount. The result is reduction only in unwanted tape noise.

What is the difference between DOLBY B-type and C-type NR systems?

B-type: This is the conventional DOLBY NR system. It boosts or lowers the low-level signals at high frequencies only (more than 5 kHz) and reduces tape noise by 10 dB.

C-type: Compared to the DOLBY NR B, it operates at lower frequencies (from 500 Hz) for uniform noise reduction across more of the audible spectrum. Tape noise is reduced by as much as 20 dB.



* "DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation. (Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.)

On the DOLBY HX PRO Head Room Extension System

The HX of the Dolby HX PRO System stands for Headroom extension, and is a system designed to improve the saturation level of cassette tapes by controlling the bias current. Although it is a Dolby system, the HX PRO headroom extension system should not be confused with Dolby NR as it is not a noise reduction system.

The Dolby HX PRO headroom extension system is basically a circuit used in cassette decks that makes use of the fact that the amount of high frequency energy that the tape can hold varies according to the amount of bias current present. Less bias current will result in more room for the high frequencies, but at an increase in low-frequency distortion. More bias helps to lower distortion, but results in loss of high frequency "headroom". During recording, the Dolby HX PRO headroom extension circuit monitors the recording signal. When high frequency peaks that are too high are detected, the bias is reduced momentarily so that these peaks can be accommodated. When these peaks are no longer present, the bias is restored to the normal level.

Even when using a normal position tape during recording, the Dolby HX PRO headroom extension system works to improve its saturation level to almost that of a metal position tape. Because the system is built into the recording circuits, it is working whenever recording is taking place. Cassette tapes recorded on decks that include this system can be played back without any problems on any deck.

Fig. -1 Recording Characteristics (Normal position tape)

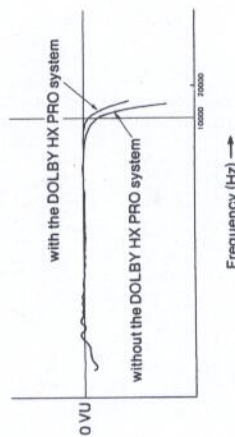
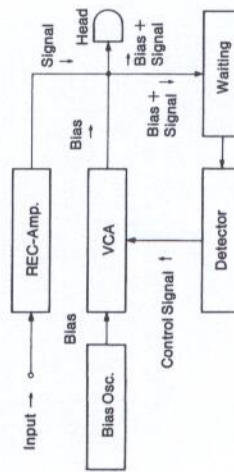


Fig.-2 Block Diagram of the DOLBY HX PRO System



When high frequency signals are over-emphasized during FM stereo recording

Use of a noise reduction system alone is not enough. In this case, it is necessary to set the MPX FILTER switch ON.

What is the MPX FILTER?

FM stereo signals contain 19 kHz pilot signals and 38 kHz subcarrier signals which convey the left and right channel information. These signals are necessary, but they must be removed from the output signals of the tuner. If these signals are not removed, they can affect the DOLBY NR system. The MPX (Multiplex) filter is designed to remove these pilot tone signals before they can be recorded.

When to use the MPX FILTER switch

Use this switch only when you are recording with DOLBY NR system. Most high quality tuners have filters to suppress FM pilot tone signals. With these tuners, you can leave the MPX FILTER switch OFF. With tuners that do not have filters, or those with inadequate filters, you should turn ON the MPX FILTER switch. Or, when you monitor the just recorded music and feel that the sound quality is not right, turn on the MPX FILTER switch. At other times, leave it OFF.

To make a copy from an original tape (Tape dubbing)

Normally, connect both cassette decks to the amplifier. Refer to the amplifier's operator's manual for operation details.

It is also possible to connect directly, deck to deck. Set the recording controls (noise reduction, recording level, etc.) exactly as you would for standard recording.

The Peak Level meter

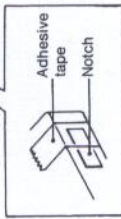
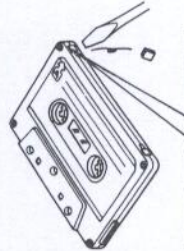
The peak level meter shows the peak (maximum) level of recording and playback signals. By monitoring the peak level, it is possible to set the recording controls of this deck to realistically reproduce the dynamic characteristics of the original source.

The standard recording level of this meter is indicated at 0 dB at a level of 250 nwb/m.

This peak level meter conforms to IEC standards.

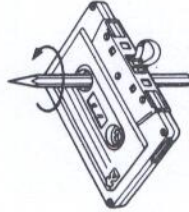
Recording defeat tabs

To protect important recordings from being accidentally recorded over, cassette tapes are equipped with recording defeat tabs. No recordings can be made when they are broken. There is one tab for each side. To record again, cover the holes with adhesive tape. When using metal or chrome position cassette tapes, make sure that you do not cover the notches for triggering their tape positions. If they are covered, the auto tape selector will not function properly.



Tape slack

Tape slack can cause the tape to twist or tangle around the pinch roller and capstan and ruin important recordings. Before using a cassette tape, take up tape slack with a pencil, for example.



Handling

- Do not touch the tape with your fingers as high frequency signals cannot be recorded in places which are not clean.
- Do not leave the cassette tape near equipment which generates a magnetic field. (TV, speaker system, etc.)

Storage

- Always put the cassette tape back into its plastic case. Store it in a dry place, away from direct sunlight, heat (stove, etc.) and equipment which generates a magnetic field. (TV, speaker system, etc.)
- Store the cassette tape with the tape taken up at the fixed speed of recording or playback. When the tape is not taken up in an orderly manner (in other words, fast forwarded or rewound), the tape might stretch or warp.
- If you are not going to use the cassette tape for a long time, rewind or fast forward the tape once in a while. This is to prevent some of the music signals from imprinting themselves over other music signals when tape surfaces are in close contact for a long time. Rewinding or fast forwarding the tape also prevents moisture condensation.

Regarding cassette tapes

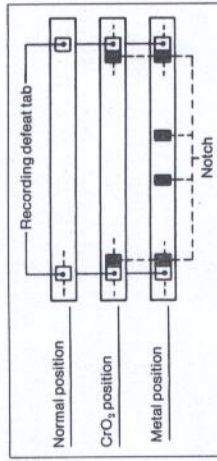
- We do not recommend the use of C-120 (120 minute) cassette tapes. The tape is too thin and can easily twist or tangle around the pinch roller and capstan.
- We do not recommend the use of cassette tapes of poor quality. You will not be able to fully utilize the ability of your stereo cassette deck with this type of cassette tape.
- We recommend that you use cassette tapes specifically made for recording hi-fi music.

The Auto Tape Selector

How tape positions are detected
Cassette tapes can be separated widely into three types:
normal position, chrome (CrO₂) position and metal position. Tape performances differ according to tape position and to fully utilize the performance of each tape, the cassette deck's recording/playback characteristics such as bias and equalization, must be set to suit each tape position.

The stereo cassette deck is equipped with an Auto Tape Selector which functions automatically after you have loaded a cassette tape.

How the auto tape selector operates
When a cassette tape is loaded, the stereo cassette deck detects the tape position by sensing the special notches on top of the cassette case, as illustrated.



Attention

- Do not use a cassette tape which does not have notches for triggering the tape position. You will not be able to get optimum recordings.
- We do not recommend the use of ferri-chrome cassette tapes for recording.

...and Take Good Care of Your Stereo Cassette Deck too

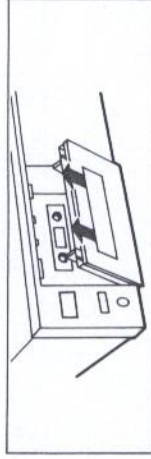
Keep your stereo cassette deck clean

After prolonged use, parts of your cassette deck which come into contact with the tape (heads, capstans, pinch rollers, etc.) become dirty due to oxide from the tape and other contaminations.

This can lead to such problems as "no sound", "distorted sound due to unstable tape transport," etc. Therefore, to always enjoy good performance, you should periodically clean your stereo cassette deck.

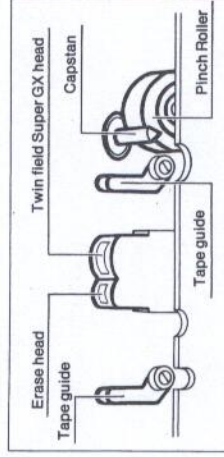
How to remove the cassette lid

- Turn on the power.
- Press the button to open the cassette holder. Grasp both sides of the cassette lid and gently pull up in the direction of the arrows to remove.



To replace the cassette lid

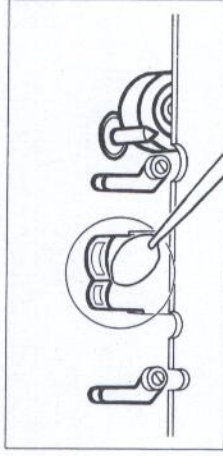
Align the cassette lid with the cassette holder and push it down in the opposite direction of the arrows.



How to clean

Use the optional accessory Akai Cleaning Kit CK-310 or a cleaning tape.

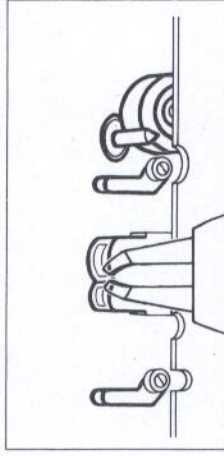
- Use a liquid cleaner exclusively for tape decks. For best results, clean your stereo cassette deck before an important recording or playback.



Keeping the heads demagnetized

Attention

Turn off your stereo cassette deck before demagnetizing. After much use, slight magnetism can build up on the recording and playback heads. This can cause loss in high frequency sound and increases in distortion. Therefore, you should periodically demagnetize the heads with the optional accessory Head Demagnetizer AH-15. Demagnetize the metal parts of the capstan as well.



Let's keep the cabinet clean, too

- Clean the cabinet with a soft, dry cloth.
- If the cabinet is very dirty, clean it with a mild detergent.
- Never use paint thinner, etc. to clean the cabinet as this may damage the finish.



The Stereo cassette deck will not turn on	<ul style="list-style-type: none"> Check to see if the power cord is connected securely to the household, timer's or amplifier's AC outlet.
No sound	<ul style="list-style-type: none"> The connected amplifier's input selector is not set properly. Make certain that the PHONES control level is audible.
The stereo cassette deck goes into absentee recording or timed playback when it is turned on.	<ul style="list-style-type: none"> The TIMER START selector is set for REC or PLAY. Set to OFF before turning on the power.
Recording will not take place	<ul style="list-style-type: none"> The cassette tape's recording defeat tabs are broken. Cover them with adhesive tape. Did you press both the REC button and ▶ button?
Distorted recording or playback	<ul style="list-style-type: none"> Recording levels are set too high. Reduce the recording level with the REC LEVEL control. Dirty or magnetized heads. Clean and demagnetize the heads.
Unstable tape transport	<ul style="list-style-type: none"> Make sure that the tape guides, pinch roller and capstan are clean. Check the cassette case for warpage or other problems.
Auto tape selector will not function properly	<ul style="list-style-type: none"> Make sure that the cassette tape has notches for triggering the tape position.
Recording sounds funny	<ul style="list-style-type: none"> The BIAS ADJUST control is not adjusted properly. Turn the MPX FILTER ON when recording FM stereo broadcasts.
Sound is funny during playback	<ul style="list-style-type: none"> The noise reduction selector is not set properly.
IPSS will not function properly	<ul style="list-style-type: none"> The blank spaces between selections are less than 4 seconds long. Use the O button during recording to create the proper length of blank space.
The cassette deck goes into playback mode automatically during tape winding	<ul style="list-style-type: none"> The IPSS system is engaged.

Should a problem persist: write down the model and serial numbers and all pertinent data regarding warranty coverage as well as a clear description of the existing trouble. Then, contact your nearest authorized Akai Service Station.

Model	GX-52
Track system	4 track 2 channel stereo
Heads	Twin Field Super GX head for recording x1 Twin Field Super GX head for recording and playback x1 Erase head x1 Direct drive FG servo motor for capstan drive x1 DC motor for reel drive x1 DC motor for cam drive and tape Eject/Loading x1
Motors	0.027% WRMS (JIS), 0.045% (DIN)
Wow & flutter59 dB (Measured via tape with 3% THD recording level)
S/N (METAL)	Dolby B type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz Dolby C type NR switch ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz Less than 0.8% (Metal)
T.H.D.	25 Hz to 17,000 Hz ± 3 dB NORM 25 Hz to 18,000 Hz ± 3 dB CrO 25 Hz to 20,000 Hz ± 3 dB METAL 25 Hz to 20,000 Hz ± 3 dB
Input sensitivity/Impedance	LINE IN 70 mV/47 kohms
Output sensitivity/Impedance	LINE 388 mV/2.7 kohms
PHONES	1.3 mW (8 ohms)
Power requirements	120 V, 60 Hz for USA and Canada 220 V, 50 Hz for Europe except UK 240 V, 50 Hz for UK and Australia 127 V/220 V, 50/60 Hz for Saudi Arabia 110 V/120 V/220 V/240 V, 50 Hz/60 Hz convertible for other countries.
Dimensions	425 (W) x 112 (H) x 352 (D) mm (16.7 x 4.4 x 13.9 inches)
Weight	6.5 kg (14.3 lbs)
Standard accessories	
Connection cords	2

* For improvement purposes, specifications and design are subject to change without notice.